

## **Working Group 1 – Current Operations**

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## Improved Turbine Engine (ITE) Analysis of Alternatives (AoA)

[27 Oct 15, 1330-1500, Rm 3]

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**ABSTRACT:** The ITE AoA objectives were to inform the Army ACAT 1 acquisition program decision for providing increased power and fuel efficiency to the UH-60M, HH-60M and AH-64E aircraft; identify and assess the schedule, cost and performance capabilities of engine alternatives that could mitigate the documented capability gaps in those aircraft; and inform the development of an ITE program (ITEP) Capabilities Development Document (CDD). As directed by the ITEP Materiel Development Decision Acquisition Decision Memorandum, this Army-led AoA was required to: include joint service participation, perform excursions of relevance to the Army, Navy, Air Force and US Special Operations Command, and explore the trade space in performance, schedule and cost for an ITE.

## Analytic Support to Combined Joint Task Force – Horn of Africa (CJTF-HOA)

[27 Oct 15, 1515-1545, Rm 3]

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**Keywords:** CJTF-HOA; Mil-to-Mil training; AMISOM

**ABSTRACT:** Since 2002, The Combined Joint Task Force – Horn of Africa (CJTF-HOA) has been operating in support of Operation Enduring Freedom; the only CJTF in the U.S. Africa Command (USARFICOM) Area of Operations (AOR). CJTF-HOA was established on 19 October 2002 in response to the attacks on September 11, 2001. CJTF-HOA was originally a component of U.S. Central Command (USCENTCOM), but was transferred to USAFRICOM on 1 October 2008. Beginning in October 2011, the Center for Army Analysis (CAA) deployed analysts to Djibouti, Africa on six month rotations to support CJTF-HOA.

In the current environment of increasing budget constraints, CJTF-HOA is placing renewed emphasis upon prioritization of operations, actions, and activities (OAA). One of the most widespread types of OAA conducted by CJTF-HOA is that of military-to-military training and advising, such as pre-deployment assistance to African countries who are members of the African Union Mission in Somalia (AMISOM) in preparation for deployments to Somalia. CJTF-HOA has recently undertaken an effort to identify, assess, and prioritize its OAAs so that it can better align operations and allocate resources accordingly.

Analytic efforts include: integration of operational assessments into the command decision making process; development of an operations assessment framework for the CJTF-HOA campaign plan; analysis of the level of impact from OAAs; analysis of Public Perception Surveys; analysis of information sharing between CJTF-HOA and East African countries using the AFRICOM Data Sharing Network (ADSN). The insights from these analytic efforts support planning and command decisions for current operations conducted not only by CJTF-HOA, but also by our partners in East Africa.

## Geospatial Analysis in Support of Current Operations

[27 Oct 15, 1545-1615, Rm 3]

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**Keywords:** Current Operations, Reach-back, deployed analyst, Geospatial, Support, GIS

**ABSTRACT:** In 1999, CAA introduced geospatial analysis to support/ enhance studies. By the onset of OIF/OEF geospatial analysis had created a niche and quickly became a significant part of the current operations reach-back support team. As the pace of the war picked up, the time difference between Fort Belvoir and Baghdad/ Kabul became problematic; subsequently basic Geographic Information System (GIS) skills were taught to the deploying analyst, leaving the more complex projects for reach-back. Projects over the years have included the allocation of resources, effectiveness of systems, war-games, assessments, and surveys. Geospatial analysis is also provided to CAA's forward-stationed analysts supporting Combatant Commanders and Service Component Commands in the Pacific, Africa, and Europe. This presentation will discuss what geospatial analysis is and its applications by CAA to support current operations analysis.

## ACQUIRE-TAS Implementation Status and Limitations

[27 Oct 15, 1615-1645, Rm 3]

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**Keywords:** Search and Target Acquisition, ACQUIRE model

**ABSTRACT:** The United States Army Materiel Systems Analysis Activity (AMSAA) has an on-going effort to improve the methodology used for Search and Target Acquisition (STA) models and the associated data in support of the modeling and simulation community. Night Vision and Electronic Sensors Directorate (NVESD) released the Night Vision Integrated Performance Model (NVIPM) in the summer of 2013. The most significant change included in NVIPM from previous modeling is the dependence of contrast sensitivity on target angular size. In order to implement target size dependency in combat simulations, ACQUIRE-Target Angular Size (TAS) was developed. This presentation discusses the certification process and status for ACQUIRE-TAS shortcut tables. Additionally, limitations of ACQUIRE-TAS in representing the continuing evolution of NVIPM are discussed. One such limitation is sensor noise impact on apparent target contrast which becomes apparent at lower light levels.

# Urban Clearing Operations in the Advanced Warfighting Simulation – A Proof of Principle

[28 Oct 15, 0945-1015, Rm 3]

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**Keywords:** Urban Clearing, Simulation, Elicitation, Probability

**ABSTRACT:** Operations during the last 10 years required combat units to operate in and conduct tactical-level urban-clearing operations. In order to ensure appropriate model representation, the U.S. Army Training and Doctrine Command (TRADOC) Analysis Center (TRAC) enhanced the ability of the Advanced Warfighting Simulation (AWARS) to represent urban-clearing operations with greater fidelity in anticipation of the continued requirement to analyze urban operations. Key to this model enhancement was improved representation of building-clearing times. TRAC combined an operations research technique known as Subject Matter Expert Elicitation with combat experience to provide a range of probable values for building-clearing times. This approach served as a proof of principle and will be refined, implemented, and expanded upon in accordance with analytic requirements. This presentation will describe the analysis methodology, the model, intended model implementation, and areas for further research.

# Using Public Perception Surveys to Enhance Understanding of the Environment and Foster Interagency Collaboration

[28 Oct 15, 1015-1045, Rm 3]

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**Keywords:** Survey, Assessment

**ABSTRACT:** Contemporary conflicts can no longer be addressed with a military-only response; instead, a three-pronged approach of defense, diplomacy, and development is now required. As such, “winning” in a conflict is increasingly defined by who has the support of the local population, instead of who controls the territory. Public perception surveys are becoming more important in gauging the sentiment of a target population, and analysts are faced with the challenge of utilizing such surveys to enhance our understanding of the operational environment which we are trying to affect. This brief will primarily focus on interagency survey efforts at the national and local level in the Philippines as a case study, which have been used to inform operational assessments, develop public messaging campaigns, provide indicators for measuring and evaluating development programs, and support political and military planning efforts of Philippine counterparts.

# Approach to Assessing Collateral Damage Estimates (CDE) and Risk-to-Own-Troops Estimate Distances (REDs)

[28 Oct 15, 1045-1115, Rm 3]

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**Keywords:** Collateral Damage Estimates, Risk Estimate Distances

**ABSTRACT:** The complex environment in which combat occurs today poses a potential risk of harm to both noncombatants and friendly troops in fire support missions. Minimizing collateral damage, risk to own troops, and adhering to the Laws of War are major concerns to the United States in combat operations. The Joint Technical Coordinating Group for Munitions Effectiveness (JTTCG/ME) has developed methodology for estimating collateral damage based upon policy outlined in the Chairman of the Joint Chiefs of Staff Manual 3160.01A. JTTCG/ME has also developed methodology for estimating risk to friendly troops in danger close missions.

While collateral damage and risk estimates may seem to have the same meaning, they require differing methodologies to analyze. The difference depends upon two things: who is getting too close to the intended target and under what conditions is someone getting too close. This presentation presents overviews of the methodologies for assessing CDE and REDs along with a comparison of collateral damage and risk estimates.

## Decreasing Humanitarian Assistance's Impact On Combatant Commands

[28 Oct 15, 1115-1145, Rm 3]

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**Keywords:** Transportation Analysis, Humanitarian Assistance, TPFDD, CONOP

**ABSTRACT:** The Department of Defense (DoD) participates in roughly 10-15% of the United States Government's (USG's) response to a humanitarian crises. The DoD provides niche capabilities in support of the whole-of-government approach to humanitarian crises. This study was performed to assist US European Command (EUCOM) in understanding the impacts humanitarian assistance (HA) requirements have on the near simultaneous flow of combat forces (defined by the numbered CONOP, Contingency Plan) and a humanitarian assistance package. In order to assess the HA impact, planning assumptions were used to define a typical "HA wedge" and a methodology was developed to identify transportation factors that were significant in preventing bottlenecks in the transportation network. The analysis provided EUCOM insights on how to plan for the flow of HA without negative effects to the delivery of their combat force and how their CONOPs can include planning branches that are better aligned with the USG's larger strategic objectives.

# Addressing Challenges in the US Army's Problem Solving Process

[28 Oct 15, 1300-1330, Rm 3]

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**Keywords:** Problem Solving, Decision Making, Operational Planning

**ABSTRACT:** Chapter 4 of Field Manual 6-0, Commander and Staff Organization and Operations, presents the US Army's problem solving process for leaders and planners. The manual distinguishes this methodology from the more specific Military Decision Making Process and Troop Leading Procedures detailed in subsequent chapters for operational planning. This presentation analyzes the problem solving process by exposing several mathematical challenges and provides alternatives from the decision science body of knowledge. This type of evaluation has broad applicability throughout national security analysis, and should appeal to planners, analysts, and decision makers across allied militaries.

The presentation begins by critiquing the process' matching of problem structures to methodologies, which recent research suggests is backwards. Specifically, more complex problems can be efficiently solved with simpler decision making methods rather than increasingly complicated ones. Next, the presentation exposes challenges in the process' evaluation criteria weighting methodology. The existing process uses a unipolar rating scale with a flawed basis and suggests treating the scaled scores as cardinal weights. The presentation offers academically-grounded alternatives to this weighting process before turning attention to the comparison of alternatives. The final area of critique considers the decision matrix method recommended for the analysis of alternatives. The decision matrix method contains contradictory scale directionality and conflicting data types, both of which undermine the results of the comparison. The presentation ends by offering alternatives to the decision matrix method from the normative and descriptive schools of decision science.

## OPLAN Fratricide

[28 Oct 15, 1330-1400, Rm 3]

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**Keywords:** Risk and Mitigation, Contingency Sourcing

**ABSTRACT:** Operational Plan (OPLAN) Fratricide is the detrimental impact on one or more operations when executing multiple OPLANs at the same time or near-simultaneously. This study was performed to help US Army Pacific (USARPAC) understand the risks inherent with unanticipated execution of near-simultaneous OPLANs as might occur during a serious, large-scale, region-wide international incident. In order to assess the risks associated with OPLAN fratricide, planning assumptions were used to define a contingency sourcing strategy and a methodology was developed to show how filling the conditional demands identified in the OPLAN documents known as Time-Phased Force Deployment Data (TPFDDs) may confound rapid response to a crisis. The analysis showed where single units were called upon to meet multiple missions, and identified the magnitude of the risk and ways to mitigate the risk. That is, can a unit do two things at once? If not, can we employ a different unit? If not, can we increase the Army's capacity?

## Bangsamoro Plebiscite Survey Analysis

[28 Oct 15, 1400-1430, Rm 3]

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**Keywords:** Survey, Assessment

**ABSTRACT:** As the Bangsamoro Peace Process continues to progress in the Southern Philippines, officials have planned for a plebiscite to determine which areas will constitute the newly formed semi-autonomous “Bangsamoro Region.” This study came at the explicit request of LTG Rustico Guerrero, the Commander of Western Mindanao Command (WESMINCOM), specifically for information on expectations of violence leading up to and during the plebiscite. Through expanding the scope of the survey to include information on the political environment and general public perceptions surrounding the peace process, the analysis provided valuable information to a broad group of stakeholders, including Joint Special Operations Task Force Philippines (JSOTF-P) and the U.S. Embassy, as well as the Philippine Office of the Presidential Advisor for the Peace Process (OPAPP) to better prepare for the Plebiscite.

## Beyond Fading Assessment Bars

[28 Oct 15, 1445-1515, Rm 3]

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**Keywords:** Assessment, MOP, Campaign Plan, SharePoint

**ABSTRACT:** Operational assessment is critical for commanders in both a deployed and garrison environment. While normally reserved for combat and stability operations, the 21<sup>st</sup> Theater Sustainment Command (TSC) is applying formal assessment to the organization's campaign plan. This ongoing effort began in 2012, with a rigorous literature review. We found that assessment is pervasive throughout Joint and Army doctrine. For example, Joint Publications 3-0 and 5-0, former Army Field Manual 5--0 and 3-24, Counterinsurgency, the current Army Doctrine and Training Publication (ADRP) 5-0, and a litany of other doctrinal manuals address operational assessment. Additionally, the Joint Force has expended considerable effort in developing assessment centric manuals such as the Commander's Handbook for Assessment Planning and Execution and more recently, Operation Assessment Multi-Service Tactics, Techniques, and Procedures for Operation Assessment. However, much of the doctrine, along with our higher headquarters, United States Army Europe (USAREUR) and United States European Command (EUCOM), predominately used traditional color graduation methods. Conversely, the literature on Afghanistan assessments showed a push against the "Fading Bars of Color" methods. These methods are very subjective and provide significant ambiguity for the decision maker to direct action. Assessing the mission accomplishment of the 21st TSC, a diverse divisional level command with responsibility across Europe and Africa, is challenging and complex. Therefore, we leveraged methods purported from the Afghanistan Theater in order to develop a combined quantitative and qualitative assessment model that reduced the color bar ambiguity.

The CG approves the campaign plan, objectives, and key tasks each FY based on strategic vision of 21st TSC and its higher headquarters. For FY15, it included supporting Unified Action and the Joint Combined Arms Force, Sustaining Relationships and NATO, Sustainment of the Theater, and Ready and Resiliency of Soldiers, Civilians, Families, and Communities. The assessment model is now on its third year and has proven to be of significant value for the commanding general (CG). It provides him increased operational awareness in order to mission command and allocate resources. The first generation model was static and product intensive relying on Microsoft Word, PowerPoint, and Excel; however, subsequent generations are now dynamic. Action officers can dynamically create and update their measures of performances complete with corrective actions and data linkages. The data is automatically aggregated in SharePoint to produce the quantitative assessment. Senior leaders and SMEs can then input their qualitative evaluations directly in the SharePoint portal supported by the quantitative data. Additionally, the CG, along with any senior leader, can continually review the assessment from their computer terminal. Finally, we formally brief the CG at the mid-point and conclusion of the fiscal year.

## John Boyd and Big Data: Understanding Mission Command in the 21st Century

[28 Oct 15, 1515-1545, Rm 3]

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**Keywords:** Analytics, Big Data, Mission Command, Strategy

**ABSTRACT:** In 1980, military strategist John Boyd changed the way we thought about outwitting an enemy force with his explanation of the OODA loop. Military decision-makers continuously cycle through the processes of Observe, Orient, Decide, and Act as they interact with their environments, staffs, and enemies. The quicker one can navigate this loop, the more advantage he may take over a slower enemy. It may be readily apparent that near-real-time knowledge made possible by big-data-type analytics can help quicken one's OODA loop. Companies regularly do this to gain advantage in the marketplace by "getting inside" competitors' OODA loops; or more likely, getting inside consumers' OODA loops. What may not be readily apparent, however, is how large quantities of disparate, fast-moving, and only sometimes useful data may impact the principles of Mission Command. Army doctrine defines Mission Command as the "exercise of authority and direction by the commander using mission orders to enable disciplined initiative within the commander's intent to empower agile and adaptive leaders in the conduct of unified land operations." This research seeks to contextualize the implications of big data on a modern battlefield in order to better understand how the principles of mission command help commanders meet operational challenges posed by complex, ever-changing, and uncertain environments.

## Special Operations Command, Pacific Country and Functional Assessments

[28 Oct 15, 1545-1615, Rm 3]

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**Keywords:** Assessments, Indicators

**ABSTRACT:** The Special Operations Command, Pacific (SOCPAC) assessment process addresses SOCPAC current operations and progress toward achieving Supporting Campaign Plan (SCP) objectives within the U.S. Pacific Command (USPACOM) Area of Responsibility. Initially, the Assessments team developed indicators and a framework based on assessing country objectives and sub-objectives. However, due to the increasing diversity, volatility, and complexity of the operational environment, the condition of uncertainty is the only constant. As a result, the objectives and sub-objectives, from which the indicators were derived, were constantly changing, so the Assessments team shifted to a more flexible approach. This adapted methodology is based on analyzing key, enduring, SOF-specific mission areas, and creating a framework for indicator development. Through the following mission areas: Counterterrorism, Building Partner Capacity, Countering Violent Extremism, Deepening Partnerships, Countering Weapons of Mass Destruction, and Preparation of the Environment, the team derives indicators that will feed objectives for both country and functional (CT and CWMD) assessments. This new approach sets the foundation for long-term trend analysis and leverages existing efforts and reporting mechanisms. This brief will provide an overview of this process, using examples from the mission areas, and highlight the way-ahead for the command's assessments. It will also cover other analytical efforts that complement this process, to include historical Operations, Actions, and Activities (OAA) data analysis and approaches for capturing and analyzing both quantitative and qualitative data to inform assessments.

## An Examination of @usarmy: Twitter Community Research

[28 Oct 15, 1615-1645, Rm 3]

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**Keywords:** Strategic Messaging; Strategic Communications; Social Media; Social Network Analysis; Assessments; Sentiment Analysis

**ABSTRACT:** All major American corporations conduct strategic messaging in the social domain. In this regard, the Department of Defense is no different. Each of the armed services maintains social media accounts to communicate with the public, including critical segments of the public, such as Members of Congress. This study, undertaken toward a graduate degree at the Volgenau School of Engineering at George Mason University, examines the use of social media by the Army Office of the Chief of Public Affairs (OCA). The purpose of the analysis is to assess the efficacy of OCA's conduct of strategic messaging in the social domain, specifically through the well-known microblog site: Twitter.

The Army has over 650,000 followers on Twitter, to whom it communicates thousands of strategic messages. Due to the construct of microblogging, however, it is very difficult to determine whether the target audience is reached, and to what extent any given message resonates. To that end, this study explores methods for examining both the resonance and the response to Army tweets, assessing the characteristics of "successful" messaging, and the depth and breadth of the social media audience.

## Size Matters: Leveraging Small and Big Data to Assess Building Partner Capacity Programs

[29 Oct 15, 1015-1045, Rm 3]

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**Keywords:** Assessments, metrics, data collection, database, surveys, building partner capacity

**ABSTRACT:** In the past few years assessments have become the job of many staff ORSAs, both deployed and in national headquarters. The assessment community has worked to provide standards on how to build frameworks and identify metrics. Less attention has been paid to the data collection phase and the integration of qualitative and quantitative sources of information. This brief will discuss ways of using “small data” such as subject matter expert interviews and traditional media content; and “bigger data” such as social media, public perception surveys, and data collected through formal databases such as Combined Information Data Network Exchange (CIDNE), in evaluations of building partner capacity programs. The brief will use examples from assessment work in Afghanistan, Africa, and the Palestinian Territories.